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## CLIMATE CHANGE & POLICY

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# **Climate Change and the Department of Defense**

## **An Introduction**

Edward J. Erickson

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**Abstract:** The following essay is an introduction to the journal's special issue on climate change and policy. The article gives a general overview of the Department of Defense's policy architecture as related to climate change as a means to introduce key issues, documents, and events related to the articles that follow. The author also details the evolution of climate change policy within the Department of Defense from passive neglect in 2006 to active concern in 2015.

**Keywords:** climate change, global warming, national security, Department of Defense policy, *National Security Strategy*, National Security Council, *National Military Strategy*, *Quadrennial Defense Review*, foreign and domestic policy, resource scarcity, adaptation, mitigation, geographic combatant command

**S**cientists have been discussing the concept of climate change since the nineteenth century, but the study of it has become more intense in the last 50 years with new tools, ideas, and terminology in the hands of researchers and their supporters. Moreover, the topic has found its way into the partisan divide that has dominated the U.S. political conversation during the last few years. Thus, it may seem counterintuitive to some Americans that the U.S. Department of Defense (DOD) fully embraces the idea that global climate change is an actual risk to national security that must be taken into consider-

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Dr. Edward J. Erickson is a retired U.S. Army officer and professor of military history at the Marine Corps University, Command and Staff College at Quantico, VA. He is the author of numerous books, including *Strategic Water: Iraq and Security Planning in the Euphrates-Tigris Basin* coauthored with Frederick Lorenz and published by the MCUP in 2013.

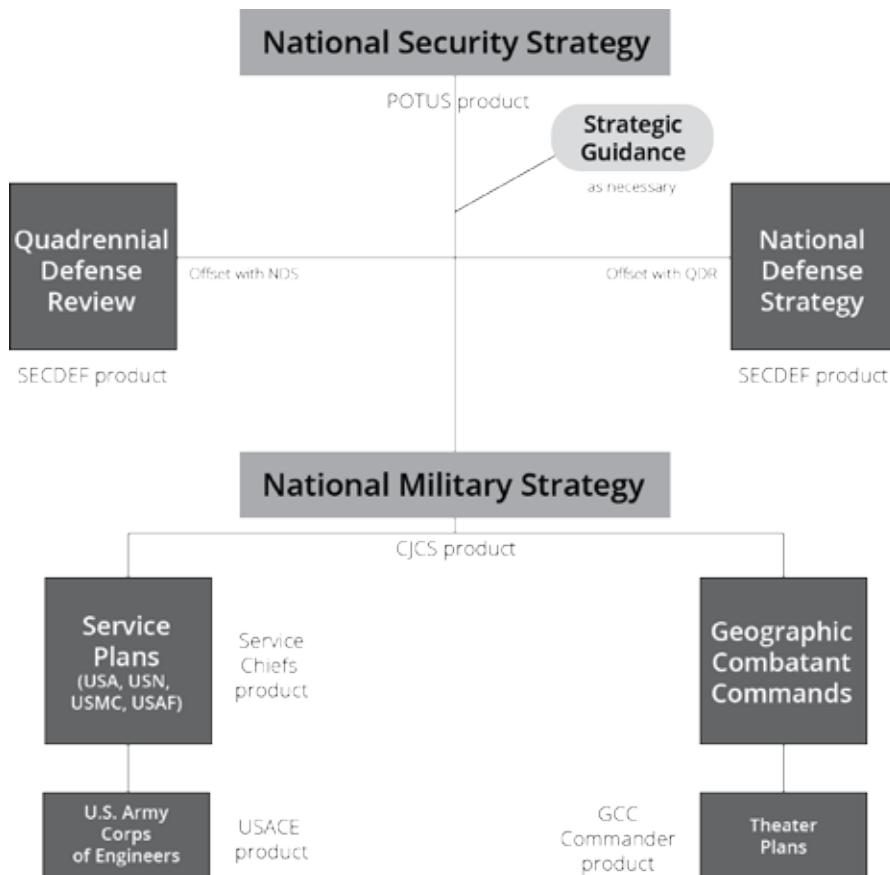
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ation in its planning and operations. Such cognitive dissonance is likely caused by a conflation of notions about the Republican Party's leadership, most of whom deny climate change outright or human activity as the cause and, at the same time, advocate for a strong national defense as well as a collective sense that the DOD itself remains a tradition-bound dinosaur, blind and unable to react to real-world realities.<sup>1</sup>

At the end of 2015, climate change as a topic for policy received international attention because of the 2015 United Nations Climate Change Conference (COP21) in Paris on 30 November–12 December. In advance of that meeting, U.S. Secretary of State John F. Kerry spoke about the relationship of national security and climate change with special attention to the military and DOD. Kerry referenced the partisan political obstacles of combining the concerns about climate change with the realities of guaranteeing national security, including attacks against himself and Charles T. "Chuck" Hagel, the secretary of defense (2013–15).<sup>2</sup> Yet, to be clear, while the American political debate rages around "cause and effect arguments" about climate change, the DOD has positions and policies about climate changes that are unrelated to causal agencies. As a matter of policy, the DOD accepts climate change as a reality affecting the present and future operating environment and accepts that American military forces must deal with its operational consequences. This article will outline the evolution of DOD climate change policy and will highlight the current state of DOD climate change planning.

## **The Evolution of Climate Change Policy in the DOD**

It is important to understand the architecture of national security policy documents and the political process associated with defense policy before proceeding into the evolution of climate change policy in the DOD. The architecture can be described as being driven from the top down, with varied inputs from the Pentagon. It begins with the *National Security Strategy* (NSS), a document that comes out of the White House with input from the National Security Council as well as advice from the various cabinet agencies (figure 1).<sup>3</sup> The NSS is not exclusively focused on military topics, and it includes such foundations of national strength as the economy, public health, and education. It is important to consider that the NSS is a political product from the White House reflecting the partisan views of the incumbent executive. From this document, the Pentagon produces the *National Military Strategy* (NMS), which outlines the current and future operating environment and how the DOD will deal with it in terms of activities, acquisitions, and resource allocations.<sup>4</sup> External to these documents, but closely related, is the *Quadrennial Defense Review* (QDR), which is produced for Congress every four years.<sup>5</sup> The QDR seeks to rebalance the military and establish priorities for the coming years. Occasionally, the executive branch

**Figure 1.** Architecture of the *National Security Strategy*

*Courtesy of the author, adapted by MCUP.*

crafts important policy documents that are outside the formal architecture of strategic policy documents. Further, policy documents also exist at lower levels (e.g., individual Services and the theater level).

### **DOD Policy during Obama's First Administration**

Other than a nod to the energy industry about zero-emissions clean coal and ethanol technologies, the idea of climate change was absent in Republican President George W. Bush's March 2006 NSS, and it is fair to say that the United States government had no policy regarding climate change under his administration.<sup>6</sup> Several senators working together across the aisle in 2007 called for a study on the topic, especially an examination of potential national security impacts, but little came of it in terms of national policy without the support of the commander in chief.<sup>7</sup> The election of Barack H. Obama in 2008 introduced seismic shifts in American foreign and domestic policies, which included a 180 degrees reversal of foreign and domestic policy regarding climate change and

global warming. The Obama administration's first NSS appeared in May 2010, more than a year after the president's inauguration, and it directly addressed climate change.<sup>8</sup> Climate change was explicitly noted as part of the strategic environment affecting American interests as was the need to engage global partners on the issue.<sup>9</sup> Obama's strategy document noted that the "danger from climate change is real, urgent, and severe" and went on to state that global warming would lead to natural disasters, land degradation, and refugee crises.<sup>10</sup> The strategy outlined domestic and foreign policy goals. Domestically, the Obama administration intended to reinvigorate the nuclear industry, increase renewable energy, invest in clean energy technology, and lower emissions in the range of 17 percent by 2020 and 80 percent by 2050. As a matter of foreign policy, the administration sought to implement the Copenhagen Agreement and to work toward global cooperation in reducing emissions.<sup>11</sup> It was an ambitious framework devised when the Democrats controlled Congress, and one pundit pointed to how President Obama "renewed the authority and appeal of American leadership on great global issues" that positioned him well on this topic at home as well as abroad in 2009.<sup>12</sup>

The DOD followed suit with its 2010 QDR, which placed climate change in the realm of reforming how DOD did business, and its authors included the section "Crafting a Strategic Approach to Climate Change and Energy."<sup>13</sup> In these pages, DOD officials presented climate change as a problem to be dealt with rather than a problem to be solved. It was an issue that, in effect, shaped the operating environment and affected the roles and missions of the American military. They noted that "climate change could have significant geopolitical impacts around the world, contributing to poverty, environmental degradation, and the further weakening of fragile governments. Climate change will not only contribute to food and water scarcity and increase the spread of disease, but may also spur or exacerbate mass migration," all of which might act as accelerants of instability and conflict.<sup>14</sup> In order to deal with these threats, the DOD saw the way forward as developing effective assessment tools and building environmental security cooperation. As a second nod to the administration, the DOD report recognized the need to reduce the impact of its own energy outputs and move toward more effective energy stewardship, collaboratively working toward making more environmentally friendly facilities and organizations.

A year later, the NMS moved the DOD discourse in a different direction and tied the problem of climate change to how it might impact global demographics.<sup>15</sup> Noting that increasing demographic trends in the developing world affected the strategic environment, Admiral Michael G. Mullen, the chairman of the Joint Chiefs of Staff (JCS), advanced the idea that "the uncertain im-

pact of global climate change combined with increased population centers in or near coastal environments may challenge the ability of weak or developing states to respond to natural disasters.”<sup>16</sup> In a nutshell, the JCS argued that a billion new urban dwellers living in underdeveloped littoral areas might be affected by climate change. Beyond this statement of strategic risk, the JCS left climate change alone.

Further strategic guidance from the Obama administration appeared in January 2012, conspicuously announcing a shift in focus to the Pacific.<sup>17</sup> This document established priorities for American force structure and the missions that the military would then undertake. While climate change was not specifically mentioned, the guidance noted that humanitarian and disaster relief operations were likely. This operational guidance, however, was circumscribed by noting that increasing or maintaining capacity to conduct such missions was not a priority requirement in building the future joint force.<sup>18</sup>

In analyzing the DOD’s approach to climate change from 2006 to 2012, it is clear that the subject was introduced into American strategic policy as the administration shifted politically from the Right to the Left in 2009. Thereafter, as a matter of strategic concern, the DOD shifted its approach to climate change from a position of no action to one that accepted the reality of global warming and climate change, as these affected the strategic environment. Importantly, the DOD steered well clear of the issue of causation linked to human activity, preferring instead to address the agency’s need for energy efficiency and economy. During the first four years of the Obama administration, the DOD came to the conclusion that climate change was most strategically relevant in the context of demographics; in this particular instance, how the impact of climate change might affect approximately one billion people who live in coastal or littoral areas of underdeveloped countries, which in turn creates risk and an obligation for humanitarian and disaster relief operations. Strategic guidance noted, however, that the joint force might not have the capacity to fully conduct such missions.

### **DOD Climate Change Policy, 2012-14**

The reelection of President Obama ensured that the issue of climate change remained embedded in DOD policy. The administration reengaged the topic in the 2014 QDR and continued the trend toward making policy statements that acknowledged climate change and presented it as a significant challenge to DOD operations. Importantly, the 2014 QDR noted that “as greenhouse gas emissions increase, sea levels are rising, average global temperatures are increasing, and severe weather patterns are accelerating.”<sup>19</sup> In turn these phenomena, coupled with global dynamics such as population changes “will devastate home,

## Executive Orders

### EO 13514

5 October 2009

#### *Federal Leadership in Environmental, Energy, and Economic Performance*

The first general, major directive by President Obama about the relationship between the U.S. government and climate change, EO 13514 focused on reduction and sustainability in the federal government. It required various agencies to reduce greenhouse gases by setting goals for reduction efforts (e.g., petroleum and water usage and waste management). It also set expectations for sustainability, especially in future contracts. This EO was revoked by EO 13693, *Planning for Federal Sustainability in the Next Decade*, signed on 19 March 2015.

### EO 13653

1 November 2013

#### *Preparing the United States for the Impacts of Climate Change*

In response to President Obama's 2013 Climate Action Plan, this EO put a new focus on federal climate change adaptation and resilience efforts by requiring all agencies, including the DOD, to develop climate change adaptation plans. Agencies were required to identify their climate change-related risks to missions and operations and to describe their plans to address those risks. The EO also created a new federal organizational structure to coordinate climate change adaptation and resilience activities, including establishing a Council on Climate Preparedness and Resilience that consisted of high-level officials from federal departments and agencies.

### EO 13693

19 March 2015

#### *Planning for Federal Sustainability in the Next Decade*

This EO requires agencies to set more robust targets on a set of sustainability practices, including greenhouse gas emissions reductions, energy efficiency, and waste reduction and recycling for federal facilities. As the nation's single largest energy user, the federal government can serve both as an example and an agent of change, per the White House. The reduction of energy use mandated is effective starting the 2016 fiscal year. EO 13693 also revoked both EO 13423 and 13514 as well as several presidential memorandums.

land, and infrastructure.” According to the QDR, the DOD needed to be aware of such issues as water scarcity, food shortages, and resource competition because they are “threat multipliers that will aggravate abroad such as poverty, environmental degradation, political instability, and social tensions—conditions that enable terrorist activity and other forms of violence.”<sup>20</sup> Accompanying this bleak assessment, the DOD followed with a corollary about adaptation and innovation: “Climate change also creates both a need and an opportunity for nations to work together, which the department will seize through a range of initiatives.”<sup>21</sup> Such initiatives included maintaining technological superiority and investing in energy efficiency, new technologies, and renewable energy sources.

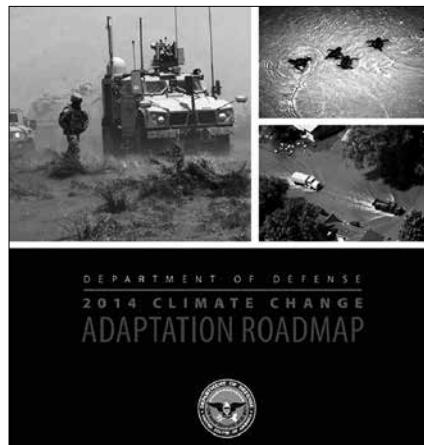
In 2013, the administration initiated a review of existing policies, directives, and guidance regarding climate change that resulted in President Obama issuing Executive Order 13653, *Preparing the United States for the Impacts of Climate Change*, signed on 1 November 2013. This order affirmed and established a federal policy framework for addressing climate change and required an update to federal agency climate change adaptation plans within 120 days. There are three key concepts that guide the development and the operationalization of the climate adaptation plans: (1) mitigate climate change by cutting carbon pollution to avoid unmanageable consequences, (2) adapt

by preparing for climate change to avoid unmanageable consequences, and (3) lead international efforts to combat climate change and prepare for its global impacts. The executive order also established an interagency Council on Climate Preparedness and Resilience.

In turn, the DOD published its *2014 Climate Change Adaptation Roadmap*.<sup>22</sup> In his foreword to the roadmap, Secretary of Defense Chuck Hagel

referred to the defense strategy noting once again that the DOD accepted climate change as a “threat multiplier” and also acknowledged that, although the science was converging on a consensus, DOD leaders remained uncertain.<sup>23</sup> The roadmap noted that climate change posed an *immediate risk* to U.S. national security and presented two DOD responses—adaptation and mitigation—as recommended by the administration. The authors defined adaptation as efforts to plan for the changes that are occurring or expected to occur and mitigation as efforts that reduce greenhouse emissions.<sup>24</sup> The DOD roadmap established three goals: (1) identify and assess the effects of climate change on the DOD, (2) integrate climate change considerations across the DOD and manage associated risks, and (3) collaborate with internal and external stakeholders on climate change challenges. The DOD now had a roadmap to integrate the expectations of the president and the commander in chief as laid out in Obama’s EO 13653.<sup>25</sup>

The roadmap affirmed that climate-related effects were already being observed at DOD installations throughout the United States and overseas, which would affect decisions related to future operating environments, readiness, stationing, environmental compliance and stewardship, and infrastructure planning and maintenance. In terms of responsibility for coordinating these functions, the roadmap’s authors reaffirmed the need for the DOD’s Senior Sustainability Council, established in 2010, to direct strategy development and coordinate initiatives. In addition, a subordinate Climate Change Adaptation Working Group, established in December 2012, implements climate change requirements established by executive orders. The roadmap outlined the need for the department to examine and alter existing plans and operations, examine the effects of climate change on training and testing, assess the effects of climate change on DOD infrastructure, and assess the effects on weapon systems acquisitions. It also required planning for climate change effects to be pushed down to combatant commanders and installation commanders. Overall, the



*2014 Climate Change Adaptation Roadmap* may be characterized as a forcing document designed to generate self-assessment by the DOD to consider current and future capabilities and capacities.

### **Moving from the General to the Explicit, 2015**

The Obama administration issued a revised NSS in February 2015, which prioritized eight efforts that addressed the top strategic risks to American interests for the first time.<sup>26</sup> Climate change ranked sixth of eight efforts, falling below catastrophic attacks on the homeland, threats or attacks against U.S. citizens, global economic crisis or slowdown, proliferation or use of weapons of mass destruction, and severe global infectious disease outbreaks, yet placed above major energy market disruptions and significant security consequences associated with weak or failing states. As a matter of national security policy, for example, efforts to adapt or mitigate climate change should rank below a global epidemic but above a refugee crisis. In effect, this reinforced the priorities established by President Obama's strategic guidance of 2012 in a more specific way.

In terms of explicitly explaining how climate change affects security, the authors of the 2015 NSS used the imperative “confront climate change” as one of eight areas vital to maintaining American security.<sup>27</sup> While the semantics of an imperative may seem inconsequential, this phrase moved the discourse from passive acceptance to active policy making in that officials in 2010 only noted that climate was a danger but, by 2014, noting that Americans must confront and deal effectively with the problem of climate change. Moreover, by establishing a priority of efforts addressing top strategic risks, the administration established a baseline for thinking about resources that should be committed to adapting to and mitigating the effects of climate change.

To summarize the administration's position and findings from several recent federal reports, the White House released *The National Security Implications of a Changing Climate* in May 2015. Much of the substance for this document originated in the *Third National Climate Assessment* published by the U.S. Global Change Research Program in 2014 but the authors also drew from the 2014 QDR, the 2015 NSS, and the 2014 *Quadrennial Homeland Security Review*.<sup>28</sup> The White House noted three explicit security implications.<sup>29</sup> First, there is a domestic threat to coastal areas; specifically, that “critical infrastructure, major military installations, and hurricane evacuation routes are increasingly vulnerable to impacts, such as higher sea levels, storm surges, and flooding exacerbated by climate change.”<sup>30</sup> It is important to note that the threat to critical infrastructure does not mean vacation homes and boardwalks, but rather the temporary and permanent flooding of airports, ports and harbors, rail lines, tunnels, and bridges. Second, restating the earlier DOD position, climate change presents a

global risk as a threat multiplier, which accelerates social and political instability. The devastation of homes and infrastructure as well as worse refugee flows were noted. Third, climate change would increase the demands on military resources held by DOD. In addition to forcing the mitigation of risks to DOD installations and organizations, climate change was anticipated to increase demand for humanitarian and disaster relief overseas; produce a greater need for air, sea, and land capacity in the Arctic; limit operating environments for military operations; and create international instability.

The release of *The National Security Implications of a Changing Climate* created a flurry of interest in the Republican-controlled House and the United States Senate. Consequently, members of Congress submitted a request with the DOD 2015 appropriations bill asking the DOD to identify the most serious and likely climate-related security risk of each geographic combatant command (GCC); the ways in which the GCCs integrated mitigation of these risks into their planning processes (including providing humanitarian assistance and disaster relief [HADR], engaging security cooperation, building partner capacity, and sharing best practices in mitigation), and a description of the resources required for an effective response. Responding quickly to the request, DOD officials released a *Response to Congressional Inquiry on National Security Implications of Climate-Related Risks and a Changing Climate* on 23 July 2015.<sup>31</sup> To answer the congressional queries, the report was organized in three sections: part I “Common Conceptions of Risk and Response,” part II “GCC—Specific Aspects,” and part III “Conclusion.”

The report began by clearly restating both the security-related risks posed by climate change as well as the DOD’s possible responses in terms of military missions. In part I, the DOD noted that it “recognizes the reality of climate change and the significant risk it poses to U.S. interests globally.”<sup>32</sup> Further, “climate change is an urgent and growing threat to our national security.” The response also affirmed that the DOD *Climate Change Adaptation Roadmap* represented a serious recognition and attempt to deal with the threats. In addition to the general thrust of the DOD’s views on climate change dangers and risks, the GCCs identified four principal climate-related security risks.

First, persistently recurring conditions such as flooding, drought, and higher temperatures cause a strain on fragile states and vulnerable populations. This risk also affects changes in patterns of infectious diseases. Increased intrastate and interstate migration is seen as a signature of this, requiring the DOD to increase humanitarian assistance and aid. Second, more frequent or more severe extreme weather events require more substantial involvement of DOD units, personnel, and assets in HADR. Third, rising sea levels and temperature changes lead to a greater chance of flooding in coastal areas, adverse impacts

on navigation, damage to port facilities, and displaced populations. This risk requires greater DOD participation in HADR and security cooperation. Finally, the decreasing Arctic ice cover, type, and thickness leads to increased tourism, greater resource extraction, and greater thawing permafrost. In turn, this greater access may increase the need for more search and rescue (SAR) capabilities.

While some might assume that DOD officials are just going through the motions in terms of implementing climate change policies, the stipulations for adaptation, and even mitigation, are leading to extensive changes in the department that trickle down into the activities of various U.S. military branches worldwide. According to the DOD, “all of the GCCs use their Theater Campaign Plans, Operations Plans, Contingency Plans, and Theater Security Cooperation Plans as a means to identify or take into account climate risks.”<sup>33</sup> Although activities vary, the combatant commanders work with their global partners to build infrastructure such as disaster response warehouses and shelters, training, best practices for mitigation of installation vulnerabilities in order to provide disaster management and response (in coordination with USAID), and equipping partners and nongovernmental organizations (NGOs) to improve capability and capacity. The GCCs are also sharing with partners across the globe. DOD officials, as a part of this national security report, noted that resources for assessing and responding to climate change impacts are currently provided within existing DOD missions, funds, and capabilities, and the main source of funding for the GCC’s HADR comes from the Overseas Humanitarian, Disaster, and Civic Aid appropriation.

It is clear from part II of the report, “GCCs—Specific Aspects,” that the GCC staff members take climate change seriously, and that they regard climate change as having the greatest impact on areas already prone to instability. The GCC staffs also recognize the risk that climate change poses to existing resource allocation. As such, it is fair to say that the GCCs are moving toward an explicit narrative and understanding of the impact of climate change.

### **Specific Aspects of Risk and Mitigation**

The DOD, working with its various commands, has identified a number of risks specific to the area of responsibility (AOR) under the purview of each GCC. The following summaries illustrate these specific risks.<sup>34</sup>

#### **U.S. Africa Command**

The authors of the national security report point to humanitarian crisis as the greatest concern for the commanders of the U.S. Africa Command (USAFRICOM). They have assessed humanitarian crisis as the most likely climate-related risk within its AOR, foremost due to the impact that devastating events, such as drought and disease, could have on vulnerable populations

and on state stability in places already struggling with fragility and conflict. USAFRICOM assesses that climate change will exacerbate existing economic, social, and environmental vulnerabilities, while conditions of drought, disease, and economic stagnation may tip states toward systemic breakdowns. Since at least 2007, the USAFRICOM commander has been arguing for a more holistic approach to creating security and stability in Africa, one that includes environmental concerns.<sup>35</sup> As of the 2015 report, USAFRICOM highlights how climate change will alter the distribution and quality of natural resources, such as fresh water, arable land, coastal territory, and marine resources. Scholars speaking and writing on contemporary Africa confirm that the country's stability, or lack thereof, hinges on several significant factors, climate change being one of them. More recently, USAFRICOM's Jeff Andrews brought the perspective of the command's Environmental Security Office to public discussion about the challenges of natural disasters and "unconventional approaches to building security" on the continent.<sup>36</sup>

### **U.S. Central Command**

U.S. Central Command (USCENTCOM) similarly monitors resource scarcity (e.g., water, food, and energy) in its arid AOR and accounts for this factor in its planning for operations in the twenty countries that make up what is commonly referred to as the Middle East, including areas of recent conflicts, such as Afghanistan, Iraq, and Syria. USCENTCOM identifies that climate changes heighten competition at the national or subnational level in an already arid region, and this competition could be more dangerous as actors seek to protect limited resources. Interstate conflict risk, however, is generally attenuated by the context of international treaties and agreements.<sup>37</sup>

### **U.S. European Command**

U.S. European Command (USEUCOM) is concerned with security risks arising from increased shipping, military operations, and resource exploration in the Arctic as the ice cap melts. The commanders in USEUCOM work with the North Atlantic Treaty Organization (NATO) and partner nations in the European Union (EU), which dictates a different set of relationships compared with commands in politically and unstable AORs, such as Africa, or in developing countries. National leaders in the EU have been front and center in global efforts to mitigate climate change and embrace the topic as seen in the 2015 Paris meetings.<sup>38</sup>

### **U.S. Northern Command**

The North American Aerospace Defense Command/U.S. Northern Command (NORAD/USNORTHCOM) commanders are concerned with the same risks

as USEUCOM leaders and identify increased resource exploration in the Arctic as driving an increase in the future demand for SAR and environmental disaster response missions in support of other agencies and civil authorities. Since this GCC is focused on homeland security and has few permanent forces, it can provide support but not drive too much effort. The United States, which is the main AOR for this command, has local and state forces that constrain national activity due to the federal system of authority.

### **U.S. Pacific Command**

U.S. Pacific Command (USPACOM) considers rising sea levels to be a particularly significant threat to people in geographically vulnerable locations. Additionally, USPACOM anticipates severe weather-related impacts, in addition to humanitarian assistance in its AOR, will increase the demand for Defense Security Cooperation Agreements as well as pose a challenge to U.S. critical defense infrastructure. In April 2013, PACOM's commander, Admiral Samuel J. Locklear III, testified to the Senate Armed Services Committee describing the problems of growing numbers of people living along the littoral regions of his AOR combined with natural disasters, including some related to climate change. He noted the complex relationship of economy, demographics, and climate change when he said, "the trend is increasing as people move towards the economic centers which are near the ports and facilities that support globalization."<sup>39</sup> He expected at the time that as the migration trend continued, USPACOM and various agencies would have to be prepared. The issues that USPACOM will be facing will be addressed inside and outside of the command. Locklear recently joined The Center for Climate and Security, bringing with him an insider view of the U.S. Navy and the Pacific AOR as well as any weaknesses that may have been evident in government planning.<sup>40</sup>

### **U.S. Southern Command**

U.S. Southern Command (USSOUTHCOM) similarly highlights the threat that sea level rise, ocean acidification, and water warming pose to fish stocks, coral, mangroves, recreation and tourism, and the control of disease. USSOUTHCOM also identifies coastal flooding to be a particular concern for parts of the Caribbean basin due to climate change-related sea level rise. Moreover, the Oak Ridge National Laboratory has been doing assessments for the various commands, updating the USSOUTHCOM statistics and variables recently. The projected warmer temperatures, no matter what the cause or other debated aspects of global warmer, will result in more heat waves and thus an increased chance of wildfires, flooding, and drought. In addition to compromising food production in Latin America, these natural disasters could have

an impact on the issues already identified by USSOUTHCOM in the July 2015 report to Congress about national security.<sup>41</sup>

## **Mitigation Efforts**

The GCCs have integrated climate-related risk mitigation into their planning processes. While the impact of climate change varies by theater and the conduct of GCC climate-related activities vary, “all GCCs share a common assessment of its significance.”<sup>42</sup> Some examples are as follows:<sup>43</sup>

- USAFRICOM has included climate-related factors into its theater campaign plan (TCP) and expanded its HADR country plans. It works closely with USAID and works to build partner capacity and has engaged with embassy country teams to ensure DOD contributions to embassies’ integrated country strategy documents.
- USCENTCOM is focusing on nearer-term (five years) projected changes in climate. It has factored current and historic climatic conditions into its TCP, especially in regard to water scarcity. It has included warning indicators as a part of the deliberate planning process. HADR and security cooperation are identified as lines of effort (LOE).
- USEUCOM has created an Arctic security roundtable and has sponsored a table-top exercise, Arctic Zephyr, focused on Arctic SAR operations.
- USNORTHCOM has developed planning tools and routinely includes extreme weather-driven scenarios in training events and exercises. It is partnering with other federal agencies to prepare for catastrophic climatic events and working with partners to improve acquisition and supply chain requirements for the Arctic.
- USPACOM has created an “all Hazards” LOE in its TCP to improve both response readiness and sustainable resource management. Country security cooperation plans have been updated with host nation collaboration through a variety of operations and activities. It is developing a visual display tool that provides historic event days, climate and weather data, and population demographics. USPACOM is aggressively working with allies and partners to leverage lessons learned and best practices in order to maximize limited resources. It has established augmentation teams around the AOR to quickly identify immediate needs.
- USSOUTHCOM does not explicitly incorporate climate change planning; it maintains communications with regional partners regarding disaster response and humanitarian assistance. It provides support as

needed for natural disasters and conducts security cooperation activities related to adapting to climate changes. It has identified the additional resources needed to achieve the goals set forth in the DOD roadmap.

## **Climate Change Policy within the Military and Naval Departments**

With the exception of the United States Army Corps of Engineers (USACE), it is difficult to find specific climate change policies from the three DOD departments—Army, Navy, and Air Force. It is fair to say that the Services, at least at this time, are focused primarily on the protection of bases and infrastructure and secondarily on the development of sustainable and renewable energy sources. These are essentially near-term, and one might say tactical, approaches that reflect the resources and capabilities of the departments themselves. For a strategic approach, one must look to the USACE for a more nuanced and tangible long-term policy and plan.

The USACE *Climate Change Adaptation Plan* published on 27 June 2014 included an “Adaptation Policy Statement” signed by Jo-Ellen Darcy, assistant secretary of the Army for Civil Works.<sup>44</sup> The policy was prepared under the direction of the USACE Committee on Climate Preparedness and Resilience and was in part an institutional response to the president’s EO 13653. The resulting USACE climate change policy statement is breathtaking in the challenge that the organization self-imposes “that mitigation and adaptation investments and responses to climate change shall be considered together to avoid situations where near-term mitigation measures might be implemented that would be overcome by longer-term climate impacts requiring adaptation, or where a short-term mitigation action would preclude a longer-term adaptation action.”<sup>45</sup> Such an ambitious policy depends on an articulate strategy and an institution intellectually and physically disposed to take action.

The USACE positions itself as the nation’s “largest and oldest manager of water resources” and thus a key player in environmental-based national security considerations. The climate change policy for the USACE is explicitly defined as “mainstreaming” adaptation and mitigation into the agency’s water resources projects, including civil works programs and water resources infrastructure. The USACE’s plans are unique in that they identify developing six core priorities to reduce the vulnerability of the nation’s waterways, ports, and associated infrastructure and habitation. These core priorities are infrastructure resilience, vulnerability assessments, risk-informed decision making for climate change, nonstationarity, portfolio of approaches, and metrics and endpoints.<sup>46</sup> In essence, the USACE advances an interagency approach to gather, understand, and analyze climate and hydrologic data and then use it to make informed

decisions regarding resource management, risk, and opportunity. Importantly, the USACE is emerging as a leader in engaging with international organizations such as the World Bank, NATO, and the World Association for Waterborne Transport Infrastructure as well as U.S. government agencies such as the GCCs to find collaborative solutions for adaptation, mitigation, and sustainability.<sup>47</sup> Since the 2014 report was published, the USACE forward thinking, multi-agency approach has continued to be advanced. Swathi Veeravalli, a USACE research scientist, noted that interagency and NGO collaboration will be needed to secure stability in places such as Africa where climate change “presents complex challenges for the fields of defense, diplomacy, and development.”<sup>48</sup>

## **Whither Goest DOD Climate Change Policy?**

Under President Obama, the DOD has moved from a national security position that ignored climate change as a defined risk to fully embracing climate change as a real and present risk. Within the Obama years, national security policy as articulated by the NMS, NSS, QDR, and strategic guidance directives from the White House has moved the narrative about climate change and national security from generalizations to explicit understandings about risk, adaptation, and mitigation. Further, the DOD has articulated a defined roadmap outlining how it will approach climate change adaptation and mitigation and tasked its subordinate GCCs to explicitly assess how climate change will impact their AORs and the populations living within them.

It is fair to say that from 2009 to 2012 military planners regarded climate change as relevant to the DOD mostly in the context of demographics. National security policies rested on the principal that climate change would have an impact on populations and primarily increase instability along the coastal and littoral areas, particularly affecting weak states. The DOD, in turn, would have to react to crises and events in these areas. A more comprehensive approach toward climate change and the risks associated with it evolved in President Obama’s second term, and by 2014, such matters as critical infrastructure and considerations of the impact on the Arctic appeared in policy documents. The *Climate Change Adaptation Roadmap* was a bellwether shift for the DOD as the White House demanded a harder look at assessing the actual impact of climate change on the operations and activities of the GCCs. By 2015, the DOD and its subordinate GCCs were able to explicitly articulate the ramification of climate change events in their AORs and how they intended to plan for them.

Climate change remains a hotly contested and divisive issue in the Democratic and Republican Party platforms as the election of 2016 approaches, even when these issues do not reach the level of media attention. Republican candidates seeking their party’s nominations have promised to reverse many of the Obama administration’s executive orders, among them are those addressing

climate change. At this point, climate change policy in the DOD already seems deeply embedded in both national- and theater-level planning. Whether climate change adaptation and mitigation might be deconstructed and taken out of American national security matters after January 2017 remains to be seen. Regardless of whether the high-level policy decisions resolve themselves, there is absolutely no question that the DOD will have to deal with the real-world consequences of climate change, man-made or otherwise, that have been seen in recent years. Instability driven by natural disasters, migration, and water and food scarcity will surely continue into the future, and American servicemembers will find themselves at the intersection of politics and actual events.

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## Notes

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